

PE NUMBER: 0603430F

UNCLASSIFIED

PE TITLE: Advanced EHF MILSATCOM

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999		
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603430F Advanced EHF MILSATCOM				PROJECT 4050		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4050 Advanced MILSATCOM	37,249	54,150	97,066	248,587	524,223	474,549	263,868	175,716	273,000	2,231,640
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Develop and acquire Advanced Extremely High Frequency (EHF) Military Satellite Communications (MILSATCOM) satellites and cryptography with necessary modifications to the mission control segment for survivable, jam-resistant, worldwide, secure communications for the strategic and tactical warfighter. Advanced EHF (AEHF) satellites will replenish the existing EHF system (Milstar) with additional capability and decreased launch costs. The program is utilizing as much commercial technology as possible and will ensure technology development sufficient for a medium launch vehicle-class satellite. The Advanced EHF capability will be available for first launch in 2006. Activities funded under this program element implement the Secretary of Defense's 1993 MILSATCOM Bottom Up Review decision to field a lower cost, advanced MILSATCOM satellite as a replenishment to Milstar. The DoD Space Architect in 1996 and OSD-led MILSATCOM Transition Team in 1997 reviewed the options for future EHF service and concluded this program is the best solution for those requirements. The Advanced EHF program implements the architecture defined by the DoD Space Architect and directed by the Joint Space Management Board and will address requirements in the MILSATCOM Capstone Requirements Document (24 Apr 98) and the Operational Requirements Document.

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<p>(U) <u>FY 1998</u></p> <ul style="list-style-type: none"> - (U)\$ 1,342 Continued Advanced EHF technology validation - (U)\$ 35,745 Continued processing Subsystem Engineering Model Program - (U)\$ 162 Advanced EHF (AEHF) Program Office Support activities - (U)\$ 37,249 Total <p>(U) <u>FY 1999</u></p> <ul style="list-style-type: none"> - (U)\$ 1,761 Continue Advanced EHF technology validation - (U)\$ 50,794 Continue processing Subsystem Engineering Model Program - (U)\$ 538 Continue AEHF Program Office Support - (U)\$ 1,057 Identified as source for SBIR - (U)\$ 54,150 Total <p>(U) <u>FY 2000</u></p> <ul style="list-style-type: none"> - (U)\$ 922 Continue Advanced EHF technology validation - (U)\$ 31,000 Complete Processing Subsystem Engineering Model Program - (U)\$ 34,290 Begin System Definition - (U)\$ 22,400 Satellite Cryptographic Development - (U)\$ 4,954 Continue AEHF Program Office Support Activities - (U)\$ 3,500 Joint Terminal Engineering Office (JTEO) Support - (U)\$ 97,066 Total <p>U) <u>FY 2001</u></p> <ul style="list-style-type: none"> - (U)\$ 11,050 Complete System Definition - (U)\$ 192,237 Begin EMD - (U)\$ 18,300 Continue Satellite Cryptographic Development - (U)\$ 23,500 Program Office Support - Continue AEHF Support, and Transition Overall MILSATCOM Joint Program Office Support from Milstar PE - (U)\$ 3,500 JTEO Support - (U)\$ 248,587 Total <p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 4, Research Category Demonstration and Validation, since it funds Advanced EHF technology validation and modeling.</p>		
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<p>(U) C. <u>Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: right;"><u>FY 1998</u></th> <th style="width: 10%; text-align: right;"><u>FY 1999</u></th> <th style="width: 10%; text-align: right;"><u>FY 2000</u></th> <th style="width: 10%; text-align: right;"><u>FY 2001</u></th> <th style="width: 10%; text-align: right;"><u>Total</u></th> </tr> </thead> <tbody> <tr> <td>(U) President's Budget (FY 1999PB)</td> <td style="text-align: right;">38,307</td> <td style="text-align: right;">54,413</td> <td style="text-align: right;">52,326</td> <td style="text-align: right;">234,315</td> <td style="text-align: right;">4,024,943</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">41,000</td> <td style="text-align: right;">54,413</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional General Reductions</td> <td style="text-align: right;">-2,693</td> <td style="text-align: right;">-263</td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. SBIR</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus and Other Above Threshold Reprogram</td> <td style="text-align: right;">-254</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-804</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 1999 PB</td> <td></td> <td></td> <td style="text-align: right;">34,740</td> <td style="text-align: right;">14,272</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2000 PB</td> <td style="text-align: right;">37,249</td> <td style="text-align: right;">54,150</td> <td style="text-align: right;">97,066</td> <td style="text-align: right;">248,587</td> <td style="text-align: right;">2,231,640</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Significant Program Changes: FY00 and FY01 funding increases maintain FY06 first launch Outyear funding realigned to finance satellite 3 and beyond in the procurement appropriation. FY99: \$1,057 identified as source for SBIR</p> <p>(U) D. <u>Other Program Funding Summary (\$ in Thousands)</u></p> <p>Other Appropriations</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 5%; text-align: right;"><u>FY 1998</u></th> <th style="width: 5%; text-align: right;"><u>FY 1999</u></th> <th style="width: 5%; text-align: right;"><u>FY 2000</u></th> <th style="width: 5%; text-align: right;"><u>FY 2001</u></th> <th style="width: 5%; text-align: right;"><u>FY 2002</u></th> <th style="width: 5%; text-align: right;"><u>FY 2003</u></th> <th style="width: 5%; text-align: right;"><u>FY 2004</u></th> <th style="width: 5%; text-align: right;"><u>FY 2005</u></th> <th style="width: 5%; text-align: right;"><u>To Complete</u></th> <th style="width: 5%; text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Missile Procurement</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">20,000</td> <td style="text-align: right;">380,000</td> <td style="text-align: right;">365,000</td> <td style="text-align: right;">375,000</td> <td style="text-align: right;">720,000</td> <td style="text-align: right;">1,860,000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) <u>Related RDT&E:</u></p> <p>(U) PE 0604479F, Milstar LDR/MDR Satellite Communications</p> <p>(U) PE 0604577N, EHF Satellite Communications</p> <p>(U) PE 0603432F, Polar Satellite Communications Program (Polar Adjunct)</p> <p>(U) PE 0303601F, MILSATCOM Terminals</p> <p style="margin-top: 20px;">(U) E. <u>Aquisition Strategy:</u> The Advanced MILSATCOM strategy is a competitive acquisition between two contractors for System Definition. One contractor will be selected to perform Engineering and Manufacturing Development and fabrication of five satellites. Advanced MILSATCOM will incorporate improvements from Milstar and commercial SATCOM practices into the next generation EHF military communication satellite system.</p>										<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total</u>	(U) President's Budget (FY 1999PB)	38,307	54,413	52,326	234,315	4,024,943	(U) Appropriated Value	41,000	54,413				(U) Adjustments to Appropriated Value						a. Congressional General Reductions	-2,693	-263				b. SBIR						c. Omnibus and Other Above Threshold Reprogram	-254					d. 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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603430F Advanced EHF MILSATCOM					PROJECT 4050	
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U) MILSATCOM Technology Validation Program					1,342	1,761	922	0			
(U) Processing Subsystem Engineering Model					35,745	50,794	31,000	0			
(U) Program Office Support					162	538	4,954	23,500			
(U) System Definition					0	0	34,290	11,050			
(U) Cryptographic Development							22,400	18,300			
(U) Satellite EMD					0	0	0	192,237			
(U) Joint Terminal Engineering Office (JTEO)					0	0	3,500	3,500			
(U) Identified as source for SBIR						1,057					
(U) Total					37,249	54,150	97,066	248,587			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
Contractor or Government	Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Performing Activity	Vehicle	Date	EAC	EAC	FY 1998	FY 1998	FY 1999	FY 2000	FY 2001	Complete	Program
<u>Product Development Organizations</u>											
Identified as a source for SBIR							1,057				
1,057											
NSA	MIPR	Dec 99	55,200	55,200	0	0	0	22,400	18,300	0	40,700
JTEO	PR	Continuing	95,644	95,644	2,000	0	0	3,500	3,500	86,645	95,645
MIT/LL	MIPR	Feb 95	11,110	11,110	7,085	1,342	1,761	922	0	0	11,110
Hughes	CPFF	May 97	66,851	66,851	8,100	17,292	25,746	16,523	0	0	67,661
TRW	CPFF	May 97	60,862	60,862	7,000	15,151	25,048	14,477	0	0	61,676
Various	Various	95-01	N/A	N/A	56,717	3,302		0	0	0	60,019
TBD	TBD	Oct FY00	TBD	TBD	0	0	0	34,290	11,050	0	45,340
TBD*	TBD	Apr FY01	TBD	TBD	0	0	0	0	192,237	1,498,665	1,690,902
Project 4050											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 1999		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
4 - Demonstration and Validation					0603430F Advanced EHF MILSATCOM					4050	
*3020 Funds are not included. The 3020 funding is found in Section D- Other Program Funding Summary											
<u>Support and Management Organizations</u>											
Various	Various	2Q95	N/A	N/A	2,330	162	538	4,954	23,500	126,046	157,530
Government Furnished Property:											
None											
					Total						
					Prior to	Budget	Budget	Budget	Budget	Budget to	Total
					<u>FY 1998</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Identified as a source for SBIR							1,057				1,057
Subtotal Product Development					80,902	37,087	52,555	92,112	225,087	1,585,310	2,073,053
Subtotal Support and Management					2,330	162	538	4,954	23,500	126,046	157,530
Subtotal Test and Evaluation					0	0	0	0	0	TBD	TBD
Total Project					83,232	37,249	54,150	97,066	248,587	1,711,356	2,231,640